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The use of genetic programming to build queries for information retrieval

- Kraft, D.H.; Petry, F.E.; Buckles, B.P.; Sadasivan, T.

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References Cited: 11

INSPEC Accession Number: 4818686

Abstract:

Genetic programming is applied to an information retrieval system in order to optimize Boolean query formulation via relevance feedback. This approach brings together concepts of information retrieval and genetic programming. Documents are represented as vectors in index term space. A Boolean query, viewed as a parse tree, is analyzed in the genetic programming sense. Through the mechanisms of genetic programming, the query is modified in order to improve precision and recall. Relevance feedback is incorporated, in part, via user defined measures over a trial set of documents. The fitness of a candidate query can be expressed directly as a function of the relevance of the retrieved set. Preliminary results based on a testbed are given. The form of the fitness function has a significant effect upon performance and the proper fitness function takes into account relevance based on topicality (and perhaps other factors).

Index Terms:

genetic algorithms; search problems; query processing; information retrieval vocabulary; Boolean functions; trees (mathematics); genetic programming; retrieval system; Boolean query formulation; relevance feedback; index term; parse tree; user defined measures; fitness function; topicality

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Query expansion for intelligent information retrieval Internet

- Jae-Hyun Lim; Hyon-Woo Seung; Jun Hwang; Young-Chan Kim; Heung-N. Dept. of Comput. Sci. & Eng., Chungang Univ., Dongjak-Ku, South Korea
This paper appears in: **Parallel and Distributed Systems, 1997. Proceedings of the International Conference on**

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10-13 Dec. 1997

1997

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References Cited: 12

INSPEC Accession Number: 5787686

Abstract:

Most systems that manage distributed information on Internet have difficulty retrieving relevant information for they are not able to include the exact search retrieval queries that users request. In this paper, we propose an automatic **expansion** method based on term distribution, which naturally reflects search retrieval terms in order to enhance the performance of information retrieval technique in the LSI is utilized in the proposed method to measure the term which appears similar to a query. Terms appearing most similar to the query consideration of the distribution are appended to the query. Thereby, the query documents without having common terms but with common concepts. An automatic reduction technique is also proposed which does not choose to append all terms in the same distribution area. The experimental results show our method maintains retrieval effectiveness as the other LSI methods without having to append unnecessary terms.

Index Terms:

Internet; query processing; information retrieval; **query expansion**; intelligent information retrieval; Internet; distributed information; semantics; term distribution; SVD technique; LSI; automatic term reduction technique

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29	BRS	L29	1	alam-hosain\$.xa,xp. AND amazon\$.as. AND (quer\$3 NEAR2 refine\$5)	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM TDB	2001/08/15 18:33
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